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CERTIFICATE

This certificate is issued in support of an application for Patent registration in a country outside New Zealand pursuant to the Patents Act 1953 and the Regulations thereunder.

I hereby certify that annexed is a true copy of the Provisional Specification as filed on 17 October 2003 with an application for Letters Patent number 528993 made by LEYHATTON INNOVATIONS LIMITED.

Dated 8 November 2004.

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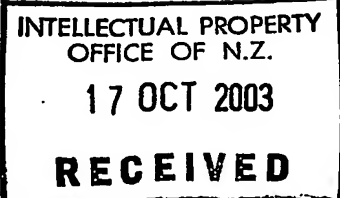
Neville Harris
Commissioner of Patents, Trade Marks and Designs



NEW ZEALANDPatents Act 1953PROVISIONAL SPECIFICATIONINDELIBLE MARKING OF LABELS

WE, LEYHATTON INNOVATIONS LIMITED a New Zealand Company
of 6-8 Weld Street, Feilding, New Zealand do hereby
declare this invention to be described in the following
statement:-

- 1 -



This invention relates to a method of indelibly marking labels and labels resulting from such a method.

The marking of labels on a just-in-time basis is known. Thus, for example, in the meat processing industry a label might be printed with pertinent information concerning meat having been or about to be packed into a package. The label may then be applied to the package by way of the label having a self-adhesive coating. However, there are many other applications where a label is printed and applied to an article or package during the manufacture or packaging process.

The marking of the label can be carried out by different means. For example, laser marking of labels on a just-in-time basis is known. The printing medium can be a multi-layer foil on which printed text, numbers, bar codes and the like can be marked by laser marking. Therefore, even with laser marking it is possible to print a label and apply it to an article in a fast and accurate manner during the manufacturing and/or packaging process.

There are, however, situations where tamper-proof marking of an article is required. In such situations the marking must be incapable of being altered i.e. tampered with. Furthermore, tamper-proof requirements may necessitate that the label cannot be removed for say

reuse in a fraudulent manner. Known labels generally do not fulfil the dual functions of indelible marking and being tamper-proof..

For example, in the meat processing industry it is desired that once meat is packed and the package labelled it is not possible to alter the labelling or, indeed, reuse the label. Furthermore, it is required that the package cannot be opened without it being readily evident visually that the package has been opened or tampered with.

It is an object of the present invention to provide a process of indelible marking of a label, the label being of a type that can be adhered to an article to be labelled.

It is a further object of the present invention to provide a tamper-proof indelible label where markings on the label cannot be altered without removal of the label from an article to which it has been applied.

Broadly according to one aspect of the present invention there is provided a method of indelibly marking a label which includes a substrate and an adhesive layer the method characterised in that marking of the label is achieved by laser marking in the adhesive layer of the label with the resultant marking being visible through the substrate.

According to a second broad aspect of the invention there is provided a label formed by a clear or transparent substrate to one surface of which is applied an adhesive layer, marking applied to the adhesive layer being visible through the substrate.

In the preferred form of the invention the label is in the form of a tape.

The adhesive layer can be a rubber based adhesive of a self-adhesive type. A pigment can be included in the adhesive layer. In the preferred form of the invention a single homogenous layer of adhesive is applied directly to the substrate.

According to the invention the marking in the adhesive layer is formed as a mirror or reverse image of what is required to be visible and readable through the substrate. In the preferred form of the invention the marking is achieved by laser marking with a vector based green light laser.

In the following more detailed description of a preferred embodiment of the invention, reference will be made to the accompanying drawing which is a schematic illustration of a label in the form of an adhesive tape to which marking is applied by laser marking in an adhesive layer of the label.

In its broadest application, the present invention relates to marking of a label irrespective of the shape and configuration of the label. However, according to a preferred embodiment of the invention, the label is in the form of a tape. This, however, is by way of illustration only and is not meant as a limitation of the invention solely to marking of a label in the form of a tape.

As shown in the drawing the tape 10 consists of a substrate 11 and on one surface thereof an adhesive 12. The adhesive layer 12 is preferably a rubber based adhesive of a self-adhesive type. It is in the form of a single homogeneous layer applied directly to the tape substrate 11. In a preferred form of the invention the adhesive layer includes a pigment.

The tape substrate 11 can be of any suitable transparent material. In the preferred form of the invention the substrate 11 is formed from polypropylene.

According to the present invention, the marking is applied to the tape 10 in the adhesive layer 12. Thus, according to the present invention, a narrow band intense beam 13 of light from a laser source is directed onto the layer 12. The intensity of the light beam 13 causes the near transparent adhesive/pigment layer 12 to darken in the localised area 14 of the light beam to leave a

permanent marking 15. The laser can be a green light laser i.e. it is in the visible wavelength band.

The laser marked impression 15 in the adhesive layer 12 is, therefore, visible through the clear substrate 11. The marking is consequently formed as a mirror or reverse image of what is required to be visible and readable through the clear substrate 11.

The scanning of the laser enables the printing of text, images, bar codes and other indicia over the entire surface area of the tape with the exception of the edges.

According to the present invention marking of the tape 10 occurs during relative movement between the laser source and the tape 10. In the preferred form of the invention the laser source is retained in one location and the tape 10 is moved past the laser source.

The laser marked tape, according to the present invention, has particular application in the meat processing industry where the tape can be used for the labelling of meat containing packages or more preferably can provide the dual function of labelling and sealing of the packages. Thus, the adhesive tape 10 can be marked "just-in-time" with markings, text and all indicia as may be required e.g. official seals, code lettering and content/weight information and the like.

In one form of the tape there can be provided weakened areas in the tape such that once the tape has been applied any attempt to remove the tape will result in the integrity of the tape being lost. This is a known art with say security labels, packaging tapes etc. This will, therefore, in part, render the sealing of the package tamper-proof because it will be readily evident if the tape has been removed and reapplied.

Also because the marking is in the adhesive layer the marking is not open to tampering. To gain access to the marking the tape would need to be removed and any reapplication would likely be readily visible. In any event it is believed that it would be difficult, if not impossible, to tamper with the marking in the adhesive layer without the tampering being visibly evident even when the marking is viewed through the substrate.

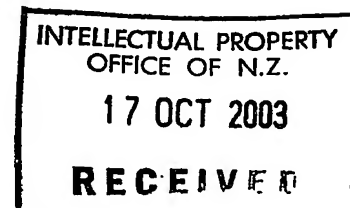
Furthermore, the transparent nature of the plastic substrate 11 can result in enhancement of the contrast between the marking and the background colour, which due to the transparent nature of the tape, will be the colour of the packaging to which the tape is applied. In the meat processing industry the packaging will generally be wood fibreboard based cartons.

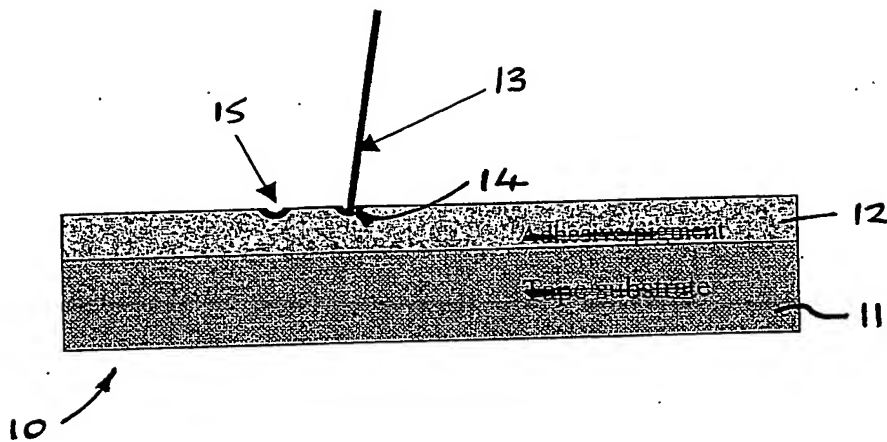
The present invention thus provides clear sharp printing, which it is believed is an advantage over traditional ink jet type printing, which does not provide an entirely

clear image and it is achieved at a cost based on time and materials. Also, the problem that can arise with ink jet printing where solvent can react with the adhesive to thereby lead to unclear image, does not occur.

LEYHATTON INNOVATIONS LIMITED
By its Attorney
DON HOPKINS & ASSOCIATES

Per: 





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